

## FIG. 1

GAG GTG CAT CTG GTG GAG TCT GGG GGA GAC TTA GTG AGG CCT GGA  
glu val his leu val glu ser gly gly asp leu val arg pro gly

GGG TCC CTG AAA CTC TCC TGT GCA GCC TCT GGA TTC ACT TTC GGA  
gly ser leu lys leu ser cys ala ala ser gly phe thr phe gly

← CDR1 →  
AGT TAT GGC ATG TCT TGG GTT CGC CAG ACT GCA GAC AAG AGG CTG  
ser tyr gly met ser trp val arg gln thr ala asp lys arg leu

← CDR2 →  
GAG TGG GTC GCA ACC ATT TAT AGT GGT GGT TTT TAC ACC TAC TAT  
glu trp val ala thr ile tyr ser gly gly phe tyr thr tyr tyr

→  
CCA GAC AGT GTG AGG GGA CGA TTC ACC ATC TCC AGA GAC AAT GTC  
pro asp ser val arg gly arg phe thr ile ser arg asp asn val

AAG GAA ATC GTG TAT CTG CAA ATG AGC AGT CTG AAG TCT GAG GAC  
lys glu ile val tyr leu gln met ser ser leu lys ser glu asp

← CDR3 →  
ACA GCC ATG TAT TAC TGT GCA AGA CGG ACG GTA GTA TCT ACG GAC  
thr ala met tyr tyr cys ala arg arg thr val val ser thr asp

→  
TAT ACT TTG GAC TAC TGG GGT CAA GGA ACC TCA GTC ATC GTC TCC  
tyr thr leu asp tyr trp gly gln gly thr ser val ile val ser

TCA (SEQ ID NO:1)

ser (SEQ ID NO:2)

FIG. 2

GAT ATC CAG ATA ACA CAG ATT ACA TCC TCC CTG GCT GCC TCT CTG  
asp ile gln ile thr gln ile thr ser ser leu ala ala ser leu

GGA GAC AGA GTC ACC ATC AGT TGC CGG CCA AGT CAG GAC ATC AGC  
gly asp arg val thr ile ser cys arg pro ser gln asp ile ser

AAT TTT TTA AAC TGG TTT CAG CAG AAA CCA GAT GGA ACT GTT GAA  
asn phe leu asn trp phe gln gln lys pro asp gly thr val glu

GTC CTG ATC TGC TAC ACA TTA AGA ATG CAC TTA GGA GTC CCA TCA  
val leu ile cys tyr thr leu arg met his leu gly val pro ser

ACG TTC AGT GGC TGT GTG TCT GGA ACA TAT TAT ACT CTC ACC AGT  
thr phe ser gly cys val ser gly thr tyr tyr thr leu thr ser

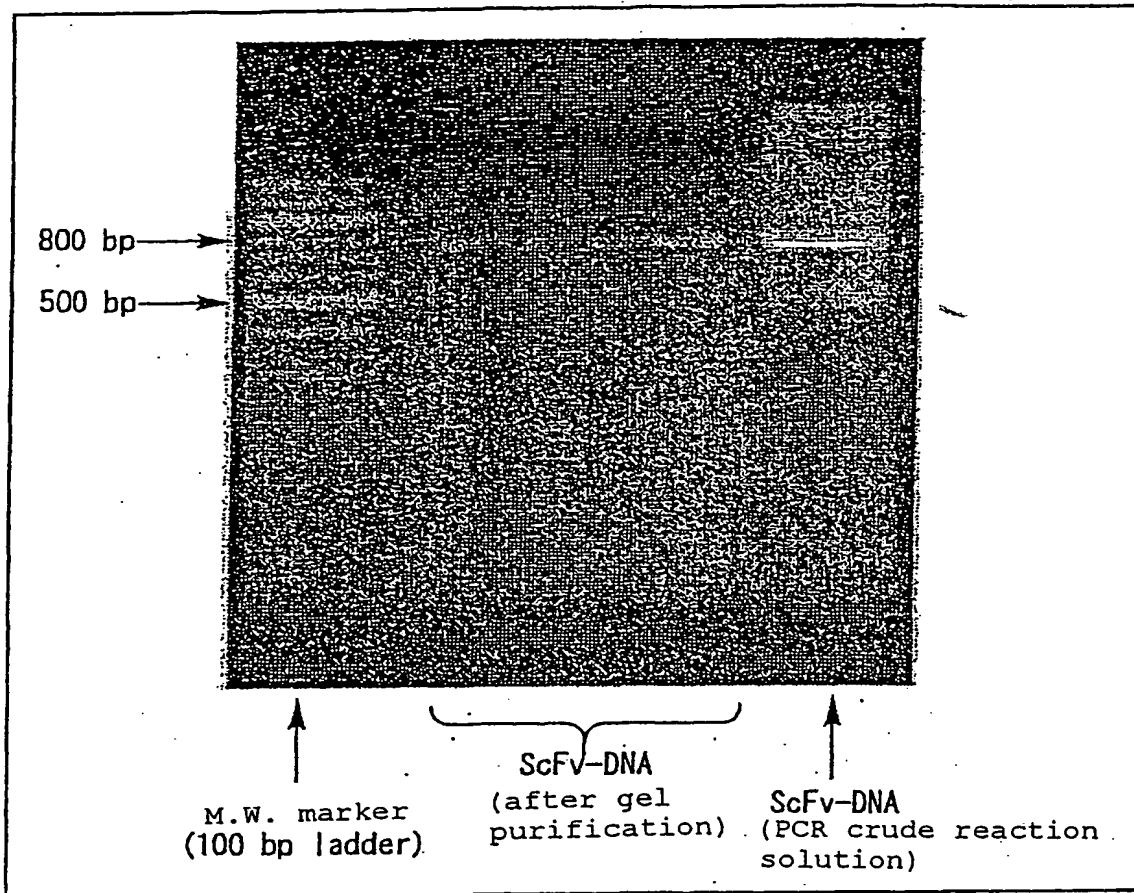
AGC AAC CTG GAA CAA GAA GAT ATA GAC ACT TCC TTT GCC ATT AGG  
ser asn leu glu gln glu asp ile asp thr ser phe ala ile arg

ATT ATA CGC GTG CTC ACG GTC GGT GCA GGG ACC ACG CTG GAG CTG  
ile ile arg val leu thr val gly ala gly thr thr leu glu leu

AAA (SEQ ID NO:3)

lys (SEQ ID NO:4)

FIG. 3



## FIG. 4

GAT GTA CAA CTT CAG GAG TCA GGA CCT GGC CTC GTG AAA CCT TCT  
asp val gln leu gln glu ser gly pro gly leu val lys pro ser

GAG TCT CTG TCT CTC ACC TGT TCT GTC ACT GGC TAC TCC ATC ACC  
glu ser leu ser leu thr cys ser val thr gly tyr ser ile thr

← CDR1 →  
AGT GGT TAT TAC TGG AAT TGG ATC CGG CAA TTT CCA GGA AAC AAA  
ser gly tyr tyr trp asn trp ile arg gln phe pro gly asn lys

← CDR2 →  
CTG GAT TGG ATG GGC CAT ATA AGT TAC GAC GGT AAC AAT AAC TAC  
leu asp trp met gly his ile ser tyr asp gly asn asn asn tyr

→  
AAC CCA TCT CTC AAA AAT CGA ATC TCC ATC ACT CGT GAC ACA TCT  
asn pro ser leu lys asn arg ile ser ile thr arg asp thr ser


AAG AAC CAG TTT TTC CTG AAG TTG AAT TCT GTG ACT ACT GAG GAC  
lys asn gln phe phe leu lys leu asn ser val thr thr glu asp


← CDR3 →  
ACA GAT ACA TAT TAC TGT TCT ATG ATC CTC TAT GGT ATG GAC TAC  
thr asp thr tyr tyr cys ser met ile leu tyr gly met asp tyr


TGG GGT CAG GGA ACC TCA GTC ACC GTC TCC TCA (SEQ ID NO:24)  
trp gly gln gly thr ser val thr val ser ser (SEQ ID NO:25)

FIG. 5


CAG ATT GTT CTC ACC CAG TCT CCA GCA ATC ATG TCT GCA TCT CTA  
gln ile val leu thr gln ser pro ala ile met ser ala ser leu


GGG GAA CGG GTC ACC ATG ACC TGC  CDR1  
ACT GCC AGC TCA AGT GTA AGT  
gly glu arg val thr met thr cys thr ala ser ser ser val ser

 TCC AGT TAC TTG CAC TGG TAC CAG CAG AAG CCA GGA TCC TCC CCC  
ser ser tyr leu his trp tyr gln gln lys pro gly ser ser pro

AAA CTC TGC ATT TAT  CDR2  
AGC ACA TCC AAC CTG GCT TCT GGA GTC CCA  
lys leu cys ile tyr ser thr ser asn leu ala ser gly val pro

ACT CGC TTC AGT GGC AGT GGG TCT GGG ACC TCT TAC TCT CTC ACA  
thr arg phe ser gly ser gly ser gly thr ser tyr ser leu thr

ATA AGC AGC ATG GAG GCT GAA GAT GCT GCC ACT TAT TAC TGC  CAC  
ile ser ser met glu ala glu asp ala ala thr tyr tyr cys his

 CDR3  
CAG TAT CAT CGT TCC CCA CCC ACG TTC GGC TCG GGG ACA AAG TTG  
gln tyr his arg ser pro pro thr phe gly ser gly thr lys leu

GAA ATA AAA (SEQ ID NO:26)

glu ile lys (SEQ ID NO:27)

FIG. 6

|        |   |
|--------|---|
| DH-150 | GAG GTG CAT CTG GTG GAG TCT GGG GGA GAC TTA GTG AGG CCT GGA |
| DF-34  | GAT GTA CAA CTT CAG GAG TCA GGA CCT GGC CTC GTG AAA CCT TCT |
|        | glu val his leu val glu ser gly gly asp leu val arg pro gly |
|        | asp val gln leu gln glu ser gly pro gly leu val lys pro ser |
| DH-150 | GGG TCC CTG AAA CTC TCC TGT GCA GCC TCT GGA TTC ACT TTC GGA |
| DF-34  | GAG TCT CTG TCT CTC ACC TGT TCT GTC ACT GGC TAC TCC ATC ACC |
|        | gly ser leu lys leu ser cys ala ala ser gly phe thr phe gly |
|        | glu ser leu ser leu thr cys ser val thr gly tyr ser ile thr |
|        | ← CDR1 →  |
| DH-150 | AGT TAT GGC ATG TCT --- TGG GTT CGC CAG ACT GCA GAC AAG AGG |
| DF-34  | AGT GGT TAT TAC TGG AAT TGG ATC CGG CAA TTT CCA GGA AAC AAA |
|        | ser tyr gly met ser --- trp val arg gln thr ala asp lys arg |
|        | ser gly tyr tyr trp asn trp ile arg gln phe pro gly asn lys |
|        | ← CDR2 →  |
| DH-150 | CTG GAG TGG GTC GCA ACC ATT TAT AGT GGT GGT TTT TAC ACC TAC |
| DF-34  | CTG GAT TGG ATG GGC CAT ATA AGT --- TAC GAC GGT AAC AAT AAC |
|        | leu glu trp val ala thr ile tyr ser gly gly phe tyr thr tyr |
|        | leu asp trp met gly his ile ser --- tyr asp gly asn asn asn |
| DH-150 | TAT CCA GAC AGT GTG AGG GGA CGA TTC ACC ATC TCC AGA GAC AAT |
| DF-34  | TAC AAC CCA TCT CTC AAA AAT CGA ATC TCC ATC ACT CGT GAC ACA |
|        | tyr pro asp ser val arg gly arg phe thr ile ser arg asp asn |
|        | tyr asn pro ser leu lys asn arg ile ser ile thr arg asp thr |
| DH-150 | GTC AAG GAA ATC GTG TAT CTG CAA ATG AGC AGT CTG AAG TCT GAG |
| DF-34  | TCT AAG AAC CAG TTT TTC CTG AAG TTG AAT TCT GTG ACT ACT GAG |
|        | val lys glu ile val tyr leu gln met ser ser leu lys ser glu |
|        | ser lys asn gln phe phe leu lys leu asn ser val thr thr glu |
|        | ← CDR3 →  |
| DH-150 | GAC ACA GCC ATG TAT TAC TGT GCA AGA CGG ACG GTA GTA TCT ACG |
| DF-34  | GAC ACA GAT ACA TAT TAC TGT TCT ATG ATC CTC TAT GGT --- --- |
|        | asp thr ala met tyr tyr cys ala arg arg thr val val ser thr |
|        | asp thr asp thr tyr tyr cys ser met ile leu tyr gly --- --- |
| DH-150 | GAC TAT ACT TTG GAC TAC TGG GGT CAA GGA ACC TCA GTC ATC GTC |
| DF-34  | --- --- --- ATG GAC TAC TGG GGT CAG GGA ACC TCA GTC ACC GTC |
|        | asp tyr thr leu asp tyr trp gly gln gly thr ser val ile val |
|        | --- --- --- met asp tyr trp gly gln gly thr ser val thr val |
| DH-150 | TCC TCA (SEQ ID NO:1)                                       |
| DF-34  | TCC TCA (SEQ ID NO:24)                                      |
|        | ser ser (SEQ ID NO:2)                                       |
|        | ser ser (SEQ ID NO:25)                                      |

FIG. 7

|        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| DH-150 | GAT | ATC | CAG | ATA | ACA | CAG | ATT | ACA | TCC | TCC | CTG | GCT | GCC | TCT | CTG |
| DF-34  | CAG | ATT | GTT | CTC | ACC | CAG | TCT | CCA | GCA | ATC | ATG | TCT | GCA | TCT | CTA |
|        | asp | ile | gln | ile | thr | gln | ile | thr | ser | ser | leu | ala | ala | ser | leu |
|        | gln | ile | val | leu | thr | gln | ser | pro | ala | ile | met | ser | ala | ser | leu |

← CDR1

|        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| DH-150 | GGA | GAC | AGA | GTC | ACC | ATC | AGT | TGC | CGG | CCA | AGT | CAG | --- | GAC | ATC |
| DF-34  | GGG | GAA | CGG | GTC | ACC | ATG | ACC | TGC | ACT | GCC | AGC | TCA | AGT | GTA | AGT |
|        | gly | asp | arg | val | thr | ile | ser | cys | arg | pro | ser | gln | --- | asp | ile |
|        | gly | glu | arg | val | thr | met | thr | cys | thr | ala | ser | ser | ser | val | ser |

→ CDR2

|        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| DH-150 | AGC | AAT | TTT | TTA | AAC | TGG | TTT | CAG | CAG | AAA | CCA | GAT | GGA | ACT | GTT |
| DF-34  | TCC | AGT | TAC | TTG | CAC | TGG | TAC | CAG | CAG | AAG | CCA | GGA | TCC | TCC | CCC |
|        | ser | asn | phe | leu | asn | trp | phe | gln | gln | lys | pro | asp | gly | thr | val |
|        | ser | ser | tyr | leu | his | trp | tyr | gln | gln | lys | pro | gly | ser | ser | pro |

← CDR3

|        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| DH-150 | AGT | AGC | AAC | CTG | GAA | CAA | GAA | GAT | ATA | GAC | ACT | TCC | TTT | GCC | ATT |
| DF-34  | ATA | AGC | AGC | ATG | GAG | GCT | GAA | GAT | GCT | GCC | ACT | TAT | TAC | TGC | CAC |
|        | ser | ser | asn | leu | glu | gln | glu | asp | ile | asp | thr | ser | phe | ala | ile |
|        | ile | ser | ser | met | glu | ala | glu | asp | ala | ala | thr | tyr | tyr | cys | his |

→ CDR3

|        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| DH-150 | AGG | ATT | ATA | CGC | GTG | --- | CTC | ACG | GTC | GGT | GCA | GGG | ACC | ACG | CTG |
| DF-34  | CAG | TAT | CAT | CGT | TCC | CCA | CCC | ACG | TTC | GGC | TCG | GGG | ACA | AAG | TTG |
|        | arg | ile | ile | arg | val | --- | leu | thr | val | gly | ala | gly | thr | thr | leu |
|        | gln | tyr | his | arg | ser | pro | pro | thr | phe | gly | ser | gly | thr | lys | leu |

|        |     |     |     |                |
|--------|-----|-----|-----|----------------|
| DH-150 | GAG | CTG | AAA | (SEQ ID NO:3)  |
| DF-34  | GAA | ATA | AAA | (SEQ ID NO:26) |
|        | glu | leu | lys | (SEQ ID NO:4)  |
|        | glu | ile | lys | (SEQ ID NO:27) |